Serial No. 10/627,885 Response to Office Action

In the Claims

Please amend the claims as indicated below. This version of the pending claims will replace all previous versions.

WHAT IS CLAIMED IS:

- 1. (currently amended) An aqueous preservative composition for treating <u>a</u> cellulose based products <u>including wood</u>, <u>said composition</u> comprising:
- a preservative metal selected from the group consisting of copper, cobalt, aluminum, iron, lead, tin, cadmium, nickel, chromium, silver, zinc and mixtures thereof in a preservative amount;
- a non-polymeric amine compound in an amount sufficient to solubilize the preservative metal;
- a polyethylenimine compound in an amount sufficient to form a chelation complex with the metal; and
- a vinyl based polymer selected from the group consisting of poly(vinyl alcohol), polyacrylamide, poly(N-vinyl pyrrolidone), poly(N-isopropyl acrylamide) and mixtures thereof; and

ammonia or an ammonia salt;

wherein no precipitate is present in the aqueous wood preservative composition.

- 2. (canceled)
- 3. (canceled)
- 4. (currently amended) The composition of claim 1 wherein the preservative metal is copper, said copper being present as a copper bearing material.
- 5. (original) The composition of claim 4 wherein the copper bearing material is selected from the group consisting of copper metal, copper sulfate, copper acetate, copper formate, copper chloride, copper nitrate, basic copper carbonate, copper hydroxide, copper borates and mixtures thereof.
- 6. (original) The composition of claim 1 wherein the non-polymeric amine is selected from the group consisting of triethanolamine, ethylamine, diethylamine, ethylenediamine, ethanolamines having the following structural formula I:

I,

wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 independently = H, -CH₃, or -C₂H₅; and mixtures thereof.

- 7. (original) The composition of claim 1 wherein the non-polymeric amine is present at a concentration between about 0.15% and about 10% by weight.
- 8. (original) The composition of claim 1 wherein the non-polymeric amine is present at a concentration between about 0.15% and about 7.20% by weight.
- 9. (original) The composition of claim 1 wherein the polyethylenimine compound has a molecular weight between about 100 and about 70,000.
- 10. (original) The composition of claim 1 wherein the polyethylenimine compound is present at a concentration between about 0.01% and about 40.0% by weight.
- 11. (original) The composition of claim 1 wherein the polyethylenimine compound is present at a concentration between about 0.1% and about 2.0% by weight.
- 12. (original) The composition of claim 1 wherein the polyethylenimine compound is present at a concentration between about 0.01% and about 2% by weight.

13. (canceled)

- 14. (original) The composition of claim 1 wherein the vinyl based polymer is present at a concentration of from about 0.1% to about 1% by weight.
 - 15. (original) The composition of claim 1 further comprising a biocide.
- 16. (original) The composition of claim 15 wherein the biocide is selected from the group consisting of fungicides, insecticides and mixtures thereof.
- 17. (original) The composition of claim 16 wherein the fungicide is selected from the group consisting of azoles, quaternary ammonium compounds and mixtures thereof.

Serial No. 10/627,885 Response to Office Action

18. (currently amended) An aqueous preservative composition for treating <u>a</u> cellulose based products <u>including wood</u>, <u>said composition</u> comprising::

between about .01% and about 15% by weight solubilized copper; between about 0.15% and about 10% by weight non-polymeric amine; between about 0.01% and about 40% by weight polyethylenimine having a number average molecular weight between about 100 and about 70,000; and between about 0.01% and about 8% poly(vinyl alcohol).

19. (currently amended) A method for treating a cellulose based product including wood which comprises, said method comprising:

applying to the cellulose based product an aqueous preservative composition for treating <u>a cellulose based products including wood</u>, <u>said composition</u> comprising:

a preservative metal selected from the group consisting of copper, cobalt, aluminum, iron, lead, tin, cadmium, nickel, chromium, silver, zinc and mixtures thereof in a preservative amount;

a non-polymeric amine compound in a solubilizing amount;

- a polyethylenimine compound in a chelation complex forming amount; and
- a vinyl based polymer selected from the group consisting of poly(vinyl alcohol), polyacrylamide, poly(N-vinyl pyrrolidone), poly(N-isopropyl acrylamide) and mixtures thereof; and

ammonia or an ammonium salt;

wherein no precipitate is present in the aqueous wood preservative composition.

- 20. (canceled)
- 21. (canceled)
- 22. (currently amended) The method of claim 19 wherein the preservative metal is copper, said copper being present as a copper bearing material
- 23. (original) The method of claim 22 wherein the copper bearing material is selected from the group consisting of copper metal, copper sulfate, copper acetate, copper formate, copper chloride, copper nitrate, basic copper carbonate, copper hydroxide, copper borates and mixtures thereof.
- 24. (original) The method of claim 19 wherein the non-polymeric amine is selected from the group consisting of triethanolamine, ethylamine, diethylamine, ethylenediamine, ethanolamines having the following structural formula I:

I,

wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 independently = H, -CH₃, or -C₂H₅; and mixtures thereof.

- 25. (original) The method of claim 19 wherein the polyethylenimine compound has a molecular weight between about 100 and about 70,000.
- 26. (original) The method of claim 19 wherein the polyethylenimine compound is present at a concentration between about 0.01% and about 40.0% by weight.
- 27. (original) The method of claim 19 wherein the polyethylenimine compound is present at a concentration between about 1.0% and about 40.0% by weight.
 - 28. (canceled)
- 29. (original) The method of claim 19 wherein the aqueous preservative composition further comprises a biocide.
- 30. (original) The method of claim 29 wherein the biocide is selected from the group consisting of fungicides, insecticides and mixtures thereof.
- 31. (original) The method of claim 30 wherein the fungicide is selected from the group consisting of azoles, quaternary ammonium compounds and mixtures thereof.
- 32. (original) The method of claim 19 wherein the cellulose based product is flooded with the preservative composition under vacuum.
- 33. (new) An aqueous preservative composition for treating a cellulose based product, said composition comprising:

a preservative metal selected from the group consisting of copper, cobalt, aluminum, iron, lead, tin, cadmium, nickel, chromium, silver, zinc and mixtures thereof in a preservative amount;

a non-polymeric amine compound in an amount sufficient to solubilize the preservative metal;

a polyethylenimine compound in an amount sufficient to form a chelation

Response to Office Action

complex with the metal; and

a vinyl based polymer selected from the group consisting of poly(vinyl alcohol), polyacrylamide, poly(N-vinyl pyrrolidone), poly(N-isopropyl acrylamide) and mixtures thereof; wherein said vinyl based polymer is present at a concentration between about 0.01% and about 8% by weight, and wherein no precipitate is present in the aqueous preservative composition.

- 6 -

- 34. (new) The composition of claim 33 wherein the preservative metal is copper, said copper being present as a copper bearing material.
- 35. (new) The composition of claim 34 wherein the copper bearing material is selected from the group consisting of copper metal, copper sulfate, copper acetate, copper formate, copper chloride, copper nitrate, basic copper carbonate, copper hydroxide, copper borates and mixtures thereof.
- 36. (new) The composition of claim 33 wherein the non-polymeric amine is selected from the group consisting of triethanolamine, ethylamine, diethylamine, ethylenediamine, ethanolamines having the following structural formula I:

I,

wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 independently = H, -CH₃, or -C₂H₅; and mixtures thereof.

- 37. (new) The composition of claim 33 wherein the non-polymeric amine is present at a concentration between about 0.15% and about 7.20% by weight.
- 38. (new) The composition of claim 33 wherein the polyethylenimine compound has a molecular weight between about 100 and about 70,000.
- 39. (new) The composition of claim 33 wherein the polyethylenimine compound has a molecular weight between about 100 and about 70,000.

- 40. (new) The composition of claim 33 wherein the polyethylenimine compound is present at a concentration between about 0.01% and about 40.0% by weight.
- 41. (new) The composition of claim 33 wherein the polyethylenimine compound is present at a concentration between about 0.1% and about 2.0% by weight.
 - 42. (new) The composition of claim 33 further comprising a biocide.
- 43. (new) The composition of claim 42 wherein the biocide is selected from the group consisting of fungicides, insecticides and mixtures thereof.
- 44. (new) The composition of claim 43 wherein the fungicide is selected from the group consisting of azoles, quaternary ammonium compounds and mixtures thereof.
- 45. (new) A method for treating a cellulose based product said method comprising: applying to the product an aqueous preservative composition for treating cellulose based products, said composition comprising:
- a preservative metal selected from the group consisting of copper, cobalt, aluminum, iron, lead, tin, cadmium, nickel, chromium, silver, zinc and mixtures thereof in a preservative amount;
 - a non-polymeric amine compound in a solubilizing amount;
 - a polyethylenimine compound in a chelation complex forming amount; and
- a vinyl based polymer selected from the group consisting of poly(vinyl alcohol), polyacrylamide, poly(N-vinyl pyrrolidone), poly(N-isopropyl acrylamide) and mixtures thereof; and

ammonia or an ammonia salt;

wherein said vinyl based polymer is present at a concentration between about 0.01% and about 8% by weight, and wherein no precipitate is present in the aqueous wood preservative composition.

- 46. (new) The method of claim 45 wherein the preservative metal is copper, said copper being present as a copper bearing material.
- 47. (new) The method of claim 46 wherein the copper bearing material is selected from the group consisting of copper metal, copper sulfate, copper acetate, copper formate, copper chloride, copper nitrate, basic copper carbonate, copper hydroxide, copper borates and mixtures thereof.

48. (new) The method of claim 45 wherein the non-polymeric amine is selected from the group consisting of triethanolamine, ethylamine, diethylamine, ethylenediamine, ethanolamines having the following structural formula I:

$$\begin{array}{c|cccc}
R_5 & R_3 & R_1 \\
\hline
N & C & C & OH \\
\hline
R_6 & R_4 & R_2
\end{array}$$

I,

wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 independently = H, -CH₃, or -C₂H₅; and mixtures thereof.

- 49. (new) The method of claim 45 wherein the polyethylenimine compound has a molecular weight between about 100 and about 70,000.
- 50. (new) The method of claim 45 wherein the polyethylenimine compound is present at a concentration between about 1.0% and about 40.0% by weight.
- 51. (new) The method of claim 45 wherein the aqueous preservative composition further comprises a biocide.
- 52. (new) The method of claim 51 wherein the biocide is selected from the group consisting of fungicides, insecticides and mixtures thereof.
- 53. (new) The method of claim 52 wherein the fungicide is selected from the group consisting of azoles, quaternary ammonium compounds and mixtures thereof.
- 54. (new) The method of claim 45 wherein the cellulose based product is flooded with the preservative composition under vacuum.
 - 55. (new) The composition of claim 1 wherein the cellulose based product is wood.
 - 56. (new) The composition of claim 18 wherein the cellulose based product is wood.
 - 57. (new) The method of claim 19 wherein the cellulose based product is wood.
 - 58. (new) The method of claim 33 wherein the cellulose based product is wood.

59. (new) The method of claim 45 wherein the cellulose based product is wood.